

REMARKS

Claims 1-30 are pending in the application. Claims 13-17 are rejected. Claims 1-12 and 18-30 are withdrawn from consideration. Applicants have amended claim 13, the only independent claim that has been rejected, as well as claims 14 and 16 to place them into independent form. Withdrawn claims 1-12 and 18-30 have been cancelled. New dependent claims 31-36 are to be added.

Election/Restriction

The Examiner notes that Applicants have made an election without traverse of species III comprising claims 13-17. The Examiner holds claims 1-12 and 18-30 to be withdrawn from consideration. In order to advance prosecution of this application, Applicants have canceled these claims. Applicants reserve the right to file one or more divisional applications on the cancelled claims.

Claim Rejections - 35 U.S.C. § 102

Claims 13-17 are rejected under 35 U.S.C. §102(e) as being anticipated by Yoshino (2002/0021391). This rejection is traversed for at least the following reasons.

Claimed Subject Matter

Independent claim 13 is directed to a liquid crystal display panel of a type usable for a cell phone display, where the display includes a moving image display area 30, a pictogram display area 36 and a partitioning line 51 that divides the moving image display area and the pictogram display area, as illustrated in Fig. 2. The partitioning line 51 may be provided in the form of a black matrix between the two areas, as explained at page 28, line 10. The features of the partitioning line are the focus of the present invention but, as explained in the Background Art section of the present application, the existence of a moving image display area in combination with a pictogram display area is known. However, as explained at pages 41-42, the prior art devices do not have a partitioning line such that a viewer may not recognize a display of the two areas.

The present application provides several embodiments in which a "partitioning line" has additional unique operational and/or structural characteristics that would not be inherent in such interface. The rejected claims 13-17 are directed to those characteristics.

Claim 13

The liquid crystal display panel defined by claim 13 has a moving image display area, a pictogram display area and a partition line. Given the scope of the claim, the partition line may be active or passive.

According to the first embodiment of the invention, the partitioning line is provided at the boundaries of a moving image display area and the pictogram display area so that a viewer can recognize a display in the two areas accurately. According to the first embodiment, as explained at page 36, the partitioning line is passive and consists of a reflection preventing layer 104 and a black matrix 105 at the boundary of the moving image display area 30 and the pictogram display area 26, as illustrated in Fig. 4 and described at pages 33-36.

As explained with regard to the second embodiment at pages 42 and 45, the partitioning line may be simply a black resin obtained by dispersing a black pigment in acrylic resin, as shown in Fig. 10B. This is a purely passive partition line that may be considered obvious by the Examiner.

According to the seventh embodiment, a reflectance may be reduced without driving a reflecting electrode and an opposed electrode in the partitioning line 51. An active partition line 51 is described at pages 54-56, where the structure of the partitioning line may permit a changeable reflectance or transmittance so that the line changes to be displayed darker than other parts in the case of reflection and to be displayed brighter than other parts in the case of transmission.

On the basis of this disclosure, we are concerned that the Examiner will take the position that the broad recitation in claim 13 is met by the admitted prior art, especially where the claim covers a passive partition line.

However, claim 13 has been amended to distinguish over the admitted prior art by stating that the partitioning line is "active." This feature clearly will distinguish over the cited prior art.

Claim 14

Claim 14, which depends from claim 13, provides that "the pictogram display wiring electrodes are arranged in an area in which the partitioning line is formed." This feature relates

to the illustrated structures in Fig. 21, as explained at pages 56- 57, with regard to the eighth embodiment.

Applicants conclude that this structure merits separate claiming. Thus, Applicants have placed claim 14 into independent form and have added a further limitation to clarify the invention.

Claim 15

Claim 15, is also dependent on claim 13 and specifies that the partitioning line is constituted by a first partition wiring formed on the first substrate and a second partition wiring formed on the second substrate with a liquid crystal layer between the second substrate and the second partition wiring. This feature is illustrated in Fig. 12 and described at pages 48-49, where the changeability of the brightness and color tone for display of the partitioning line 51 may be achieved.

Claim 15 continues to depend from amended claim 13, as it provides a more specific description of the changeability of the active partition line. The claim has been corrected to define the location of the liquid crystal layer, as recited at pages 47-48 and as illustrated in Fig. 12.

Claim 16

Claim 16 also depends from claim 13 and specifies that the partitioning line includes at least one of an area in which color filters of at least two colors are laid one on top of another and a black matrix area. This feature is illustrated in Fig. 22, with a description at pages 56-57. With regard to Fig. 22, the partitioning line comprises three layers consisting of the red color filter 52, the green color filter 53 and the blue color filter 54 in a stacked relationship. As a result, unlike the other areas, a transmittance can be extremely reduced.

Applicants have placed claim 16 into independent form, since the characteristics of the partitioning line do not depend upon a changeability of transmittance or reflectance. Applicants also have further limited the claim to define the stacking of the filters as being "in the direction of light transmission."

Claim 17

Claim 17 depends from claim 13 and specifies that the partitioning line is an area with a reflectance lower than that of at least one of the moving image display area and the pictogram display area. This feature is disclosed throughout the application, and, in particular, is discussed at page 55. This feature provides an additional basis for patentability.

Yoshino

The Examiner cites Yoshino as anticipating all of claims 13-17. The Examiner looks to Fig. 2 of the reference to identify a moving display area 2B and a pictogram display area 2A with a partition line (dashed) between them. As explained at paragraph [0023], the pictogram display part 2A provides a semi-transmission type while the moving image display part 2B performs a transmission type display. A backlight (not shown) is disposed at a back surface of the liquid crystal display device and is turned OFF when the first display part 2A is to be displayed and is turned ON when the second part 2B is to be displayed, as is specified at paragraph [0024].

With reference to the illustration of a cross section of the display 2 in Fig. 2, the structures that provide for the transmission display in area 2B and the semi-transmission display in area 2A can be seen. Notably, at the intersection of the display area 2A and display 2B, as identified by the dashed line, there is (1) a black matrix (BM) that would block any transmission of light and (2) an absence of any conductors that would provide a variability of transmittance or reflectance at the interface. Thus, to the extent that the Examiner may assert that the area of the black line defines a "partition line," as claimed, such area does not provide "active" control over transmittance or reflectance.

Claim 13

With respect to amended claim 13, the reflectance or transmittance of the partition line is "active".

Claim 14

At page 3 of the Office Action, the Examiner states that Yoshino discloses the pictogram display area to have wiring electrodes that wire the pictogram display electrode provided in the area to the outside of the pictogram display area and the pictogram display wiring electrodes are

arranged in an area in which the partitioning line is formed [See at least Fig. 2]. This position of the Examiner is unsupported by the disclosure in Yoshino.

As is clear from Fig. 1, which is the more pertinent illustration, even assuming that the dashed line and the gap between polarizers defines a partition line, there is no wiring for the pictogram display in an area in which the partition line is formed. The pictogram display would comprise area 2A, given the Examiner's position, and the electrodes and wiring (CT) are not disposed in an area in which the partition line is formed.

Moreover, as to the location of the pixel electrode PX and the gap between display 2A and 2B in the illustration of Fig. 1, the pixel electrode is disposed in a longitudinal direction between areas 2A and 2B. The illustration of the invention in Fig 21 concerns electrodes that are transverse to the display 36 and do not enter the moving display area 2B. Applicants have amended claim 14 so that it now specifies that the wiring is also "transverse" to the display and does not enter the moving image display area.

Claim 15

The Examiner states that Yoshino discloses a partitioning line in Fig. 1 to be constituted by a first partition wiring formed on a first substrate (SUB1) and a second partition wiring formed on the second substrate (SUB2) with a liquid crystal layer between the second substrate and the second partition wiring.

The Examiner's analysis is clearly erroneous since there is no partition wiring formed on the first substrate (SUB1) that is at the partitioning line. Even if the Examiner asserts that both the pixel electrode PX and the liquid crystal LC are at the partitioning line, there is no counter electrodes (CT) at the alleged partitioning line. Thus, this feature is not disclosed. Further, since claim 15 would continue to depend from claim 13, there is no variability, at the display or controlled display at the partitioning line as set forth in claim 13.

Claim 16

The Examiner states that Yoshino discloses a partitioning line in Fig 1 that has at least one of an area in which color filters (FIL) of at least two colors are laid one on top of another and a black matrix area (BM).

In framing this rejection, the Examiner appears to take the position that the filters are "one on top of another" in a direction transverse to the direction in which light is transmitted. However, it is clear that the filters do not exist at the partitioning line as alleged by the Examiner. Further, the filters are not laid one on top of another in a direction in which light is transmitted in the display.

Applicants respectfully submit that the claim is patentable on the first basis. Moreover, the claim has been amended to specify that the filters are arranged in a direction of light transmission.

Claim 17

The Examiner asserts that Yoshino discloses the partitioning line being an area (BM) with a reflectance lower (due to BM) than that of at least one of the moving image display area and the pictogram display area. In this case, the Applicants have maintained dependency of claim 17 on claim 13, as amended. This would ensure the allowability of claim 17 as originally stated.

New Claims

Applicants have added new claims 31 and 32, which correspond to claim 17, but now depend from independent claims 14 and 16, respectively.

Applicants also have added new claims 33 and 34, which depend from claims 14 and 16, respectively, and are directed to the use of a black matrix. This is based on the teaching that the partitioning line may comprise the black matrix 105 and reflection preventing layer 104, as illustrated in Fig. 4.

Further, Applicants have added new claims 35, which depends from claim 13 and is directed to the use of a partitioning pixel portion consisting of a first partitioning wiring and a second partitioning wiring, which are opposed to each other via liquid crystal and are controlled to perform blinking display or reversal display of a pictogram

Finally, Applicants have added new claim 36, which also depends from claim 13 and is directed to the use of an uneven organic film and a moat for partitioning line on the first substrate, so that a reflectance in the area can be made lower than that of the other areas.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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